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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,942

03/29/2006

Akinobu Sato

NAA237

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10/19/2010

Intellectual Property Law Office of David Lathrop  
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EXAMINER

BAND, MICHAEL A

ART UNIT

PAPER NUMBER

1723

MAIL DATE

DELIVERY MODE

10/19/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b></p>	<b>Application No.</b> 10/573,942	<b>Applicant(s)</b> SATO ET AL.	
	<b>Examiner</b> MICHAEL BAND	<b>Art Unit</b> 1723	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 08 October 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
 b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
 (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
 (b) ☐ They raise the issue of new matter (see NOTE below);  
 (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
 (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
 5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
 6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
 7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
 The status of the claim(s) is (or will be) as follows:  
 Claim(s) allowed: \_\_\_\_\_.  
 Claim(s) objected to: \_\_\_\_\_.  
 Claim(s) rejected: 1-8.  
 Claim(s) withdrawn from consideration: \_\_\_\_\_.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
 9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
 10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
 12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
 13. ☐ Other: \_\_\_\_\_.

/Alexa D. Neckel/  
 Supervisory Patent Examiner, Art Unit 1723

Continuation of 11. does NOT place the application in condition for allowance because:

On p. 5-6, the Applicant argues that Kitani teaches roughness increases with angles larger than 45 degrees, thus Kitani does not teach smoothing at an angle of less than 30 degrees.

The Examiner respectfully disagrees. The Applicant's claim 1 requires smoothing at an angle less than 30 degrees; there is no claim limitation requiring a specific degree of surface roughness. As stated by Kitani, the smoothing effect of cluster ion bombardment is strongly dependent on the incident angle, where incident angles less than 45 degrees are contemplated by Kitani (p. 491, right column), therefore Kitani teaches that the incident angle is a result-effective variable depending on the desired surface roughness. As stated by the Applicant, Kitani teaches for small incident angles less than 30 degrees, less smoothing was observed (p. 491), however Kitani does not teach that smoothing does not take place at incident angles less than 30 degrees, thus Kitani does teach that some degree of smoothing happens at incident angles less than 30 degrees. As stated in the Interview dated 9/14/2010 (referred to as 2<sup>nd</sup> Interview by the Applicant), the Examiner recommended including a claim requirement that the claimed angle of less than 30 degrees results in a specific degree of surface roughness to show unexpected results. While the Applicant submits the analogy of Kitani teaching a surface roughness of the Himalayas increasing to perhaps the size of the Olympus Mons volcano on Mars, this is mere speculation. As stated above, Kitani teaches that for small angles less than 30 degrees, less smoothing was observed (however some degree of smoothing is still observed), where larger incident angles of 45 degrees the roughness is increased (p. 491). This 'increase in roughness' at larger incident angles is in comparison to the surface roughness exhibited by smaller incident angles. The analogy for this teaching is the starting with the Rocky Mountains, where using the smaller incident angle results in a surface roughness equivalent to speed bumps, whereas using the larger angle results in a surface roughness equivalent to small hills; both incident angles result in a smoothing effect, but the larger incident angle results in an increased surface roughness as compared to the smaller incident angle.

On p. 6-7, the Applicant argues that since Kitani teaches using incident angles greater than 45 degrees results in less smoothing, Kitani teaches away from the claimed smoothing.

The Examiner respectfully disagrees. The Applicant has not claimed a specific degree of smoothing (i.e. surface roughness); only that the claimed degree accomplishes a general smoothing. Kitani teaches that using larger incident angles still smoothes but results in increased surface roughness, with Kitani further teaching that the incident angle used for smoothing is dependent upon the desired surface roughness. Therefore one of ordinary skill would find it obvious to use a larger incident angle to accomplish smoothing if the specific degree of surface roughness is not important.